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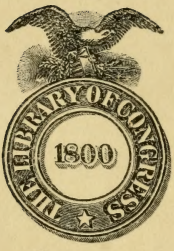

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A-B-C OF GARDENING

BY

EBEN E. REXFORD

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A-B-C OF GARDENING

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I

MAKING THE GARDEN

THE first thing to do in making a garden is to spade up the soil to the depth of a foot.

The second thing to do is to work this spaded-up soil over and over until it is thoroughly pulverized.

The third thing to do is to add to it whatever fertilizer you decide on using. This may be old, well-rotted manure from the cow-yard, if you can get it, for it is the ideal fertilizer for nearly all kinds of plants. But if you live in city or village the probabilities are that you will be obliged to make use of a substitute. Bone meal—the finely ground article—is about as good as anything I know of for amateur use. The amount to use will

depend on the condition of the soil to which you apply it. If of simply ordinary richness, I would advise a teacupful of the meal to a yard square of ground. If the soil happens to be poor, a large quantity should be used. It is not possible to say just how much or how little, because no two soils are exactly alike. One can decide about this when he sees the effect of what has been used on the plants whose cultivation he has undertaken. I speak of using it by measure rather than by weight because the gardener will find it easier to use a cup than a set of scales.

When the soil has been thoroughly pulverized and the fertilizer has been well worked into it you are ready for sowing seed—that is, if the weather conditions are favorable. It is always advisable to wait until all danger from frost is over and the ground is warm enough to facilitate prompt germination. At the North the seed of our hardier plants can safely be put into the ground about the middle of May, but the tenderer kinds can well afford to wait until the first of June.

In sowing seed don't follow the old way of making a furrow an inch deep in the soil, by drawing the hoe-handle along it, and then covering the seed deeply. Fine seed often

fail to germinate when given this treatment. Simply scatter the seed *on the surface*, and then sift a little fine soil over it, or press the ground down firmly with a smooth board, thus imbedding the seed in the ground to a depth that is sufficient to insure enough moisture to facilitate the process of germination.

Large seed, like that of the sweet-pea, nasturtium, mirabilis, and morning-glory can be covered with half an inch of soil.

Weeding should begin as soon as you can tell the weeds and the flowering plants apart. It is absolutely necessary to keep the beds clean if you would have good flowers. Allow weeds to remain, and in an incredibly short time they will get such a start of the other plants in the bed that these will have received a check from which it will take them a long time to recover, when given an opportunity to do so by the removal of the enemy. There can be no compromise between weeds and flowering plants. One must give way to the other, and weeds will have it all their own way if given the ghost of a chance.

Every gardener should be the owner of a wheelbarrow, a hoe, a spade, an iron rake, a watering-pot, and a weeding-hook. The last, which will cost ten or fifteen cents, will

enable you to destroy as many weeds in half an hour as you could pull in half a day by hand, and it will leave the soil in as light and porous a condition as would result from going over it with rake or hoe.

II

MAKING A LAWN

MOST home-makers labor under the impression that it would be useless for them to undertake the making of a lawn, thinking it requires the knowledge and experience of the professional gardener to make such an undertaking successful. This is where they make a mistake. Anybody can make a lawn that will afford a great deal of pleasure if he sets about it, provided he is willing to do some hard work.

The first thing to do is to make the surface of the ground level. This can be done by the use of spade and hoe. Take off the tops of the hillocks, if there happens to be any, and fill the hollows with the soil thus obtained.

When you have a fairly even surface, go over it with an iron-toothed rake and make it fine and mellow. It is very important that all stones and rubbish of every kind should be removed if you want a good sward.

After reducing the soil to the necessary

degree of fineness, add whatever fertilizer to it you propose to make use of, and then go over the ground again with the rake and work this fertilizer in thoroughly. It is necessary to have it evenly distributed. If it is not, there will be patches where the grass will be thick and luxuriant, and others where it will be scanty and poor. Such a result should be guarded against by working the fertilizer into the soil so evenly that no part of it will be without its proper share.

Then you are ready for sowing the seed.

The seed to sow is the very best kind in the market. This will cost you a little more than the inferior kind that is offered each season, but it is worth a good deal more, and it is what you must have if you would make your lawn a thing of beauty. Procure it from some reliable dealer who makes a specialty of "lawn-grass mixtures."

If you tell the dealer the size of your lawn and ask how much seed you will need, he will give you what he considers a fair estimate. I would advise you to double the amount, for this reason: a thickly seeded lawn will have the appearance, by the middle of the first season, of a lawn a year or two old. And because of the thickness of the grass it will be better able to stand the effect of drought and

heat. You will find that the extra money invested in seed was a wise investment, and you will never have cause to regret making it.

Sowing seems, to the amateur gardener, a matter of so little importance that it requires no special attention. All there is to do is to scatter the seed over the ground. But nine out of ten amateurs who do the work with this idea in mind will speedily discover their mistake. When the grass comes up thickly here and there, with vacant places between, they will come to the conclusion that sowing grass seed evenly isn't the easiest thing in the world, for the seed is so light that the slightest puff of air will blow it away, and some will settle where you want it to, and some will lodge where other seed has already lodged, and the result will be very unsatisfactory. In order to prevent such a condition of things as far as possible, I would advise sowing from north to south, and then from east to west. Do this on a still, damp day, if possible, and hold your hand close to the ground as you scatter the seed. Don't attempt to broadcast it, as you may have seen some gardener do, but be content to scatter it over a small portion of soil each time you sow a handful of it. By doing this you will prevent most of it from being blown away.

III

THE BORDER

THE owner of a small lot is often puzzled to know what to do with it. Of course there must be flowers, but where shall they be put? As a general thing, they are set out here and there, indiscriminately, and the result of such haphazard planting is far from pleasing. There ought always to be at least a suggestion of system in all garden arrangements. To scatter shrubs all over the lawn breaks up the sense of breadth and dignity which should characterize it, however small it may be. This being the case, the best place for shrubs and perennials is at the sides of the lot, leaving the rear for the vegetable garden.

A border extending along the sides of the lot will serve as a frame for the home picture, and will be found the most satisfactory arrangement possible for small places. It

ought to be at least four feet wide—six or eight will be found much better if ground can be spared for it—and a pleasing effect can be secured by letting it increase in width as it approaches the rear of the lot. It will be far more attractive if its inner edge curves a little here and there than if it is confined to straight lines.

I would advise a "mixed border." By that is meant one in which shrubs and perennials are grown together and where annuals and spring-flowering bulbs can be used effectively to "fill in."

The soil for such a border must be made and kept quite rich, for almost always we put so many plants into it that great demands are made upon the nutriment contained in it, and in order to have fine plants they must get all the food they can make good use of. You can't grow plants to perfection unless you feed them well. Every season—preferably in spring—manure should be applied liberally.

In setting out shrubs one should take a look ahead and endeavor to see, with the mind's eye, what they will be likely to be when fully developed. If this is not done we are pretty sure to plant them so close that by and by we have a thicket of them,

in which none of them can properly display their charms.

Between the shrubs plant perennials and such summer-flowering plants as dahlias and gladioli.

Plant the taller perennials at the rear, and those of medium height in the center, of the the row, with low-growing kinds in front. By doing this we secure a sort of banklike effect which will be very pleasing. In order to plant intelligently, study the catalogues of the florists, for most of them give the height of each plant listed in them.

If I were asked to name the best shrubs for amateur use, I would choose these: spiræa (especially the *Van Houttei* variety), weigelia deutzia, lilacs in variety, flowering currant, and golden elder—the last a shrub with rich yellow foliage, capable of producing a most delightful effect when planted among richly colored flowering plants like the hollyhock and delphinium. From the perennial list I would select peonies, phlox, delphinium, iris, and hollyhocks.

My selection would include the kinds named above because of their hardiness and ease of culture as well as their beauty. There are many other kinds which richly deserve a place in all gardens that are large

enough to allow of free selection, but the owner of the average home lot will be obliged to draw a line somewhere, and he will be safe in confining his choice to the kinds I have mentioned. They are among the very best plants we have in their respective classes.

IV

ANNUALS

THE owner of a garden that is so small that but few plants can be grown in it naturally desires to confine her selection to such kinds as will be likely to give the greatest amount of bloom and require the least amount of care.

At the head of the list it is quite safe to place the sweet-pea. This old and universal favorite blooms profusely and throughout the entire season if prevented from ripening seed. It is beautiful, wonderfully varied as to coloring, and so fragrant that it is almost a rival of the rose in this respect. It requires a treatment so unlike that of ordinary plants that it is really in a class by itself, if one would secure the best results from it. It likes to get a start early in the season and to have its roots deep in the soil, where they will be cool and moist when the hot, dry, midsummer season comes. To gratify this desire on the part of the plant we sow its

seed in trenches four or five inches deep, about the middle of April, at the North, or as soon as the ground is free from frost. These trenches are V-shaped, and can easily be made by drawing the corner of a hoe through the soil. Sow the seed quite thickly, and cover with an inch of soil, trampling it down firmly. When the young plants are about three inches tall draw in about them some of the soil thrown out from the trench, and continue to do this from time to time as the plants reach up, until the trench is full. In this way we succeed in getting the roots of the plant deep enough to prevent them from drying out if the season happens to be one of drought. The best support for the sweet-pea is brush. The next best is woven-wire netting with a large mesh.

Another plant that the amateur gardener cannot afford to overlook is the nasturtium. It is a most profuse and constant bloomer. Its colors run through all shades of yellow, orange, and red. It has a delicious spicy fragrance quite unlike that of any other flower I have any knowledge of. Fine for cutting.

The aster must also be given a place in all gardens, large or small, because of its beauty, its wide range of color, and its ease of culture. There are several quite distinct vari-

eties, all good, but none better than the long-stalked "branching" kind. This is the ideal sort for cutting. Its flowers rival those of the chrysanthemum in general effect and lasting quality.

Phlox Drummondii is an old favorite that holds its own against any of the new-comers. So is the verbena, and the calliopsis, and the good old "bachelor's-button," which you will find masquerading in the florists' catalogues as centaurea. It must not be blamed for this, as it has no reason to be ashamed of its old-fashioned name. The seedsmen alone are responsible for the change in nomenclature.

Other standbys among the annuals are poppies, larkspur, petunias, ten-week stock, marigolds, scabiosa, mignonette, eschscholtzia (better known as California poppy).

Of course the list of really desirable kinds could be extended almost indefinitely, but I do not think it advisable to make mention of other kinds here, because it is not the part of wisdom for the amateur gardener to attempt growing "a little of everything." It is better to confine one's attention to a few of the kinds with which success is reasonably sure until experience justifies one in undertaking the culture of those which are not so self-reliant and unexacting as the kinds mentioned.

V

VINES

IF any one were to ask me to tell him what vine I considered best adapted to amateur culture *in all respects*, I would decide in favor of the ampelopsis—better known in many localities as Virginia creeper. My decision would be based on the beauty of the vine, its rapid growth, its hardiness, and its ability to furnish its own support on walls of wood, brick, or stone. Its foliage is very pleasing in summer, but it is doubly so in autumn, when its green gives place to a brilliant crimson and a rich maroon. At that season of the year all our flowering vines are eclipsed by its magnificent coloring. It grows well in all kinds of soil—better, of course, in a good one than a poor one—and it will go to the eaves of a three-story house if given an opportunity to do so, and cover every inch of the wall unless special efforts are made to prevent it from doing this. If

you do not want your windows hidden under its luxuriance it will be necessary for you to cut away a good many of its branches during the summer.

The Dorothy Perkins rose—one of the rambler class—is a most charming vine when in full bloom, and it has the merit of being quite attractive at other periods, as its foliage is a rich, dark, shining green—something that cannot truthfully be said of some of the other members of this class of roses. It is the only rambler I would advise for use about porches and verandas. It blooms in wonderful profusion. Its flowers are a soft pink, borne in large, loose clusters or sprays. The general habit of the plant is all that could be desired. It is the only member of the rambler class that is really vinelike.

There are two varieties of clematis that I am always glad to speak a good word for. One is the native variety, catalogued as *C. flammula.* This is a very rampant grower, and well adapted for use wherever a dense shade is desired. It blooms in August. Its flowers are white. They are succeeded by seed with a feathery tail which makes the plant look as if covered with gray smoke. This variety is always greatly admired because of this peculiarity. The other variety

that I have a special fondness for is *C. paniculata.* This is a late bloomer, being in the prime of its flowering period long after the plants in the garden have completed the work of the season. Its flowers are of the purest white. They are small, individually, but they are borne in such profusion that the upper portion of the vine will be completely covered with them. It will look as if a fall of snow had tried to hide it. I consider this one of our very best flowering vines. Unlike the hybrid members of the clematis family, with their enormous flowers of rich colors and scanty foliage, it is perfectly healthy, and it has ample foliage to make a charming background for its blossoms.

The trumpet honeysuckle is a favorite wherever grown. It is one of our best vines for porch use, as it does not climb to a great height. It bears its scarlet-and-orange flowers throughout the entire season. It is an especial favorite because its foliage is always clean and seldom attacked by insects.

The good old morning-glory is, all things considered, our best annual flowering vine. It grows rapidly, reaching to the windows of the second story by midsummer. It is a free and constant bloomer. It is excelled by no other vine in richness and variety of color—

white, pink, purple, blue, violet, and crimson flowers will make a veritable "morning glory" of it. Care should be taken to provide it with stout cord to climb by. A light twine is not strong enough to support the weight of its heavy vines.

Another good flowering vine is the hyacinth bean. Why it should be given this name I do not know, as there is nothing about it suggestive in the remotest degree of the hyacinth. Its flowers are a brilliant scarlet. It seldom grows to a greater height than seven or eight feet, and is therefore well adapted to use about porches where a rampant grower is not wanted.

The wild cucumber, catalogued as echynocystis, is a good vine for covering tall buildings and screens. It will make a growth of twenty-five or thirty feet in a season. Its foliage is pretty, as are its white flowers, which make the vines look as if covered with foam. These give place to prickly fruit, somewhat resembling some varieties of cucumber, hence its popular name.

The wild grape that is found growing along creeks and rivers in almost all parts of the country is a most excellent vine for covering summer-houses and for planting where it can have trees to clamber over. Its flowers are

so small and so pale in color as to be scarcely distinguishable, but they are so delightfully fragrant that every one knows when the vine is in bloom without looking at it. Its fragrance has much of the pervading quality that characterizes mignonette, and is quite unlike that of any other plants I can call to mind. It seems to have the very spirit of the spring in it—vague, elusive, and sweet beyond description.

I would not class the crimson-rambler rose among the vines, though the majority of our florists have done so. I treat it as a shrub, and find it most satisfactory when grown in that manner. I allow the young canes to reach a length of seven or eight feet. Then I nip off the tops of them. This causes side branches to develop. A central support is provided for these branches. In this way I succeed in getting flowers all over the plant —in other words, of making it a shrub instead of a vine. If it is used to cover summer-houses, the canes can be allowed to grow to suit themselves.

Celastrus *scandens*, more commonly known as bittersweet, is a native vine that can easily be domesticated. It is well worth a place about every home. Its foliage is bright and clean, its flowers inconspicuous, but its

fruit makes the vine a favorite wherever grown. This is a bright crimson, each berry being inclosed in an orange shell which splits apart in three pieces, revealing the fruit inside. As this fruit remains on the plant until late in the season, it makes the vine quite as attractive as if it were covered with flowers at a time of the year when bits of brightness are greatly appreciated in the garden.

VI

SPRING WORK IN THE GARDEN

THERE will be a good deal of work to do in the garden, no matter how small it is.

A good deal of this work will consist in cleaning up and removing rubbish, unless attention was given to this in the fall. The tops of last year's perennials should be cut away close to the ground, and dead annuals should be pulled up and added to the refuse-heap.

If a covering was provided for your plants, it should be removed altogether or dug into the soil about the roots of the plants it protected. Never allow it to remain upon the ground about the plants unless it is of a kind that is not particularly noticeable.

This should not be done, however, until the season is so far advanced that all danger of severe freezing is over. A plant that has had winter protection will not be in as good condition to resist the effect of severe cold as it would have been if that protection had not been given it. Therefore do not be in that

haste which may result in waste. Rome wasn't built in a day, and spring isn't confined to a week. There will be plenty of time for uncovering plants when the weather will justify it.

The bulb-bed should not have its covering taken off until you are quite sure that the weather will not be severe enough to injure the tender plants just peeping through the soil. Of course one cannot be quite sure when it is safe to do this, as our Northern seasons are subject to frequent and sometimes severe relapses. But if we keep an eye on the weather we can generally tell when uncovering is advisable. If, after the beds have been uncovered, a cold spell happens along and there seems to be danger in the air, spread blankets, old carpeting, or something of a similar nature over them. But before doing this drive pegs into the ground for the covering to rest on. Its weight should not be allowed to fall upon the young shoots, which will be so tender at this period as to be easily broken.

Go through the garden with a view to finding what changes can be made advantageously. We often make sad mistakes in the location of our plants, and do not discover them until it is too late to unmake them that

season. Sometimes a plant that has got into the wrong place so disappoints us that we think of throwing it out, but if we give it a place where its merits have an opportunity to assert themselves properly it turns out to be extremely satisfactory. The aim should be to get every plant into the place just suited to its peculiarities. It may take several seasons to bring about so desirable a result, but something along this line should be part of every season's work.

Old clumps of perennials will be greatly benefited by a division of their roots about once in three years. Take them up, cut their roots apart, discard all but the youngest and strongest ones, and reset in a soil that has been made rich and mellow.

Shrubs should be looked over with a view to doing whatever pruning may seem necessary. I do not advise much pruning, however. A shrub knows better than I do what shape to grow in to be most effective, and I prefer to let it train itself. About all the pruning I do is to cut away weak wood and to thin out the branches if there seems too many of them.

Early-flowering shrubs should never be pruned until after their flowering period is over.

Manure should be applied to all plants

each spring. The older it is the better if you procure it from the barn-yard. On no account should fresh manure be used. Spread your fertilizer out about the plants, and then work it into the soil with spade or hoe.

You will doubtless find many seedling plants in the beds where they germinated last fall. These should be transplanted to places where they are to bloom as early in the spring as possible. All perennials that got a start last year will bloom this season, but those grown from seed sown this spring will not bloom until next year. Therefore make liberal use of self-sown plants.

We are generally in such a hurry to do garden work in spring that we begin it before the ground is in proper condition to make good work possible. If it is spaded up before the surplus water from early rains and melting snows has had a chance to drain out of it, no attempt should be made to pulverize it then. It simply will not pulverize, but the result of your attempt to make it do so will be a lot of lumps and chunks. But if left exposed to the disintegrating action of wind and sunshine and possible showers for a few days, it will be in a condition that will make it an easy matter to reduce it to fineness under the application of hoe or rake.

Plan your garden. Never trust to "the inspiration of the moment" in making it. Go over the ground and decide where you think this or that plant would be most effective. Make a diagram of it, locating each plant that you propose to make use of, and when seeding-time comes you will have something definite to work to. Haphazard gardening is never satisfactory.

VII

MIDSUMMER IN THE GARDEN

WE somehow get the impression that when our garden is made in spring that's about all there will be for us to do. Our share of the work has been done, and if Nature does *her* share, well and good. But in our endeavor to shirk further responsibility on to Nature we lose sight of the fact that gardening isn't a thing of periods. It is, on the contrary, a thing of one period, and that period covers the entire season.

We soon discover that weeds will need attention every day. It really seems, sometimes, as if the pulling of one weed gave a score of others an opportunity to take its place, and that these were waiting impatiently to step into the shoes of their predecessors, if such a figure of speech is allowable in this connection. Neglect weeding for a week and you will be pretty sure to find that your seedlings of flowering plants are "out

of sight" in more senses of the term than one.

But weeding is not all that needs to be done. There will be more or less transplanting to do in the early part of the season. This should be done on a cloudy day, if possible. If no such day happens along at the time when it is absolutely necessary that this phase of gardening should be attended to, do it after sundown.

Before lifting the young plants, water them well to make the soil adhere to their roots. As little exposure to the air as possible is desirable. Also have the ground in which they are to be set ready to receive them, that the work of transplanting may be completed with the least possible delay.

Every gardener ought to provide herself with a little trowel that will enable her to lift a plant without breaking apart the soil about its roots.

Drop the seedling into the place prepared for it, and press the soil about it firmly but gently. Then water well.

If the next day is a warm and sunshiny one, some shade should be given the newly set plants. By tacking pieces of pasteboard six inches wide and eight or ten inches long to sticks a foot in length a very practical

shade can easily be made. The stick to which the pasteboard is fastened by carpet-tacks is to be inserted in the ground by each plant. The pasteboard is to be bent over in such a manner as to prevent the sun's rays from striking the plant. By this method the plant gets all the protection it needs and the air is allowed free circulation about it.

The hoe ought to be used daily in all gardens. If the season happens to be a dry one, don't forego its use under the impression that stirring the soil will result in its drying out. If you want to keep moisture *out* of the soil, there is no way of doing it more effectually than by allowing it to become crusted over. But if you want to get all possible moisture *into* it, keep it light and porous. Such a condition will make it possible for it to absorb whatever moisture there may be in the air.

Make it a rule to go over your plants when they come into bloom and cut off every faded flower, to prevent the formation of seed. Most plants will give but one general flowering period if left to manage their own affairs. All their energies will be expended in the production of seed. As a natural consequence they will give you few or no flowers after the early part of summer. But, thwart them in their seed-producing intent and they will at

once set about getting the start of you by making another effort to carry forward to completion their original plan. The result will be satisfactory to you, if it isn't to them.

See that all plants needing support are provided with it. Never allow plants of slender habit to sprawl all over the ground. They give the garden an untidy, "mussy" look, and constantly accuse you of neglect. A bit of brush inserted by the side of such plants will furnish all the support required by them.

In watering the garden in a dry season make the application after sundown. This will allow the plants to get the benefit of the water before the sun has a chance to draw the moisture out of the soil, as it will rapidly do if watering is done in the morning.

What every gardener needs is a watering-pot with a long spout. This will make it an easy matter to apply the water close to the plant, where none will be wasted.

Never use a nozzle on your pot when watering plants in the garden. That will scatter the water over a wide surface, and so thinly that but little good will result from the application.

VIII

WINDOW-BOXES

BLESSED be window boxes! They are excellent substitutes, on a small scale, for a garden, and almost any woman can have them, while a *real* garden is out of the question for a majority of the women who love flowers. A garden on the ground is one of the impossibilities for most women in the city who could well afford one, so far as financial ability is concerned, but she can make her windows so attractive with flowers and "green things growing" that she will not greatly miss the garden in a crowded city whose every foot of land is worth thousands of dollars and therefore cannot be given up to anything as unprofitable, from a pecuniary standpoint, as flower-growing.

The culture of plants in a window-box seems an easy thing to the person who sees plants growing luxuriantly in it. But it is not as easy as it looks, because the beginner

in this phase of gardening seldom studies conditions before undertaking it. It generally takes one or two seasons of mistakes and consequent failures to make one a successful grower of plants in window-boxes. But after repeated failures the amateur generally discovers what was wrong in her treatment, and after that the probabilities of failure are slight.

The cause of failure nine times out of ten is lack of sufficient moisture in the soil. A box exposed to air on all sides, as most window-boxes are, parts rapidly with the water that has been applied to it, and before one suspects the actual condition of things the soil in the box becomes so dry that the plants wilt. Then a little more water is applied, and the plants revive temporarily, but next day they wilt again, and shortly this alternation of a good deal of drought and a small amount of moisture results in the death of the plants.

A box a foot wide and a foot deep and four or five feet long will require a large pailful of water daily. If you want to grow good plants in boxes don't form the habit which prevails to a great extent among amateur gardeners—that of applying a small quantity of water whenever you happen to think of it. A small amount makes the soil look wet on its

surface and deceives one into thinking that because it looks wet there it must be in proper condition below. Examination will convince you of this mistake. Always apply enough water each time to saturate all the soil in the box, and make it a rule to do this every morning or evening. If you go on the "every-time-you-think-of-it" plan the chances are that you will not think of it at the right time or as frequently as you ought to. Be regular in caring for your plants.

If those who complain of failure with window-boxes will use more water and use it frequently, they will have no trouble in growing plants in them, and growing them as well as they can be grown in pots. And they can grow almost any kind of plant. The soil used should be rich, to begin with, and later on in the season fertilizers should be applied to keep the plants well supplied with nutriment.

IX

THE USE OF GROWING PLANTS FOR TABLE DECORATION

THE woman who takes pride in making the family table attractive at all times finds nothing quite so effective for this purpose as flowers, and these she cannot always afford.

But she need not be without material for beautifying the home table if she has windows in which plants can be grown, for there are many plants that are quite as attractive as flowers. But a good many persons have not yet learned that they can be made satisfactory substitutes for cut flowers, because they have not taken the trouble to study the thing out. They have heretofore depended on cut flowers for table decoration, as have their friends, and it has not occurred to them to get out of the rut they are in and think out new ways and means for making home pleasant.

A well-shaped, medium-sized plant with

fine foliage will add quite as much to the appearance of any table as a vaseful of flowers that would cost several times as much. True, it may lack the brilliant coloring of the flowers whose place it takes, but that does not prevent it from being beautiful, and beauty is what we aim at when we supplement the attractions of fine table-linen, sparkling cut glass, silver, and dainty china of the well-arranged table with the added attraction of plants and flowers.

One of the best plants for this purpose is the variety of asparagus catalogued as *plumosus nanus*. It is more commonly known as asparagus fern, though it is not even a most distant relative of the fern family. It has foliage so fine that it has all the delicacy of lace, and is more like a mist of green than like ordinary foliage. It sends up frondlike growth that spreads out symmetrically on all sides of the pot. Pruning is seldom required to bring it into or keep it in proper shape. A plant of it, with its pot hidden by a pretty jardinière or wrapped in tissue-paper will be in perfect harmony with any table fittings. If a bit of bright color is desired, three or four roses or half a dozen carnations with their stems thrust into the soil in the pot will furnish it. If the housewife provides herself

with three or four plants of this asparagus, she will at all times have something at hand with which to make her table attractive. In this way she will become independent of the florist and his fancy prices. These plants are of the easiest culture, and succeed wherever geraniums can be grown.

At holiday-time several plants that make excellent table decorations are on the market. One is ardisia, with rich, dark-green foliage, and scarlet berries that are quite as brilliant as flowers. Another is the Jerusalem cherry, with pretty foliage and a profusion of crimson fruit. These plants remain in attractive condition for weeks, and the woman who invests in them has something with which to make her table as attractive as it would be if two or three dollars had been expended in flowers that would last for only a few days. It will be seen that it is economy to buy plants of this kind. Where there are several there is opportunity for variety, thus ruling monotony out of the question.

Cocos Weddelliana is a small-growing palm with delicate, feathery foliage. One might call it a "baby" palm because of its small size. A plant of it always adds distinction to the table on which it is used. This, like the asparagus, the ardisia, and the Jerusalem

cherry, readily adapts itself to ordinary window culture.

Begonia Gloire de Lorraine is a most beautiful flowering plant. It bears its dainty pink blossoms so profusely and in such wide-spreading panicles that the pot in which it grows is often entirely hidden by it. Its color is charming by daylight, and under artificial light it is lovely beyond description. I know of no other pink flower that is as satisfactory by lamplight. When an especially dainty and out-of-the-common decoration is wanted for the table, nothing superior to it can be found. This begonia can be obtained from most florists in fall. If care is taken to remove it from the table to the window after it has done decorative duty, it will remain in bloom during the greater part of winter. But it must not be left on the table long at a time. Neither should any of the other plants named, for they will suffer if kept away from good light very long.

Primula obconica is a most satisfactory plant for table use when in full bloom. Its trusses of pale lilac, soft pink, or pure white have such a wild-woodsy air about them that they are always sure of such attention as American Beauties seldom get. The baby primrose is a miniature edition of *P. obconica,*

and it is one of the most lovable flowers imaginable. Like its larger relative, it is a free and constant bloomer, and on this account will be found very useful as a table ornament.

Small specimens of auricaria, with heavy, dark-green foliage much like that of our native hemlocks and balsam, make a novel decoration. This is the plant that the children delight in calling the Christmas-tree plant, because of its shape and its evergreen foliage.

During fall and winter, when fruit and vegetables are plentiful, very pleasing table decorations can be made from them. On Thanksgiving Day such an arrangement will be found very appropriate.

A friend of mine who has no windows at which flowers can be grown well, but who, in spite of that, is determined to make her table attractive, lays in a supply of bittersweet berries during the fall, and "everlasting flowers," like gomphrena, helichrysum, cockscomb, and others whose petals are strawlike in texture, and from these she contrives some really charming decorations for her table. Where there is a will there is always a way, you know.

It will be seen from what I have said above that many plants can be grown in the win-

dows of the living-room that can be used with fine effect in table decoration. I would advise making a collection of such varieties as I have named for this especial purpose. With such a collection to draw from no woman need be at loss for decorative material, and while her plants are not doing duty on the table they will be making her windows attractive, thus serving a double purpose.

X

DECORATIVE PLANTS

THERE are few homes nowadays in which at least one plant of ornamental foliage cannot be found. I know of many in which some have had place so long that they have come to be considered as members of the family. Especially is this true among German people, who have an especial fondness for bride's myrtle and English ivy. In many of these homes I have found finer plants than I have seen in any greenhouse. I am not sure that they do not get more care than the children of the family.

The myrtle to which I refer has small, fine foliage, evergreen in character, of a rich, glossy green. It branches freely, and in two or three years becomes a good-sized shrub. It does not bloom very freely, but this does not detract much from the value of the plant, as its flowers are small and not at all showy, though really quite pretty in their snow-white

purity. The real value of the plant is in its foliage. It can be kept growing the year round, or it can be wintered in the cellar. In summer a plant of this kind will be found very effective for porch decoration.

The English ivy is our best evergreen vine. It is one of the few plants that can be grown successfully in rooms where there is not much direct light. Indeed, I have seen it trained across the ceiling, in German homes, where the light seemed insufficient to meet the requirements of any plant, and there its leaves were as dark in color as those of most other plants are when standing close to the glass, and seemed to be quite as healthy. Two or three times a year, the owners told me, the vine was taken down, coiled up for convenience in transit, and taken out of doors. There it was spread out upon the grass and left until the rain had washed it clean. Because of the thick, firm, leathery texture of its foliage it seemed immune from the bad effects of dust, hot, dry air, and the absence of direct light. When well grown it is a plant that any one might well be proud of. For training up about the ceiling of the bay-window it stands at the head of the list of vines adapted to house culture.

Sometimes scale attacks both myrtle and

ivy. When this happens heroic measures must be resorted to in order to head off permanent injury. In the chapter on "The Insect Enemies of Plants" a remedy is suggested that seldom fails to produce most satisfactory results.

Palms are universal favorites. There are but three varieties that I feel justified in recommending for amateur culture. These are the arecas, especially *A. lutescens*, *Latania borbonica*, better known as the "fan palm," and the kentias, *belmoreana* and *fosteriana*.

Of these three varieties I would advise the kentias for beginners in palm-culture, as they are more robust than any of the others and quite as ornamental. They are of somewhat coarser habit than *Areca lutescens*, which is an almost ideal sort for general use. *Latania borbonica* has large, almost circular leaves borne on short, stout stalks, thrown out from the center of the plants. It does not grow tall like the kentias or the arecas. It is the variety from which our palm-leaf fans are made. One who has never seen this plant can get a fairly good idea of the shape of its foliage by looking at one of these fans. The three varieties mentioned are all of comparatively easy culture. Give them a loamy soil, well drained, and enough water to keep

the soil always moist. Keep them out of strong sunshine. Don't experiment with them, hoping to hasten development. As long as they keep on producing three or four new leaves during the year, let them alone. If they lift the crown of the plant out of or above the soil, and the roots give them the appearance of a plant on stilts, don't be frightened, and repot them, setting them low in the soil to cover the roots. It's natural for them to grow in that way. Wash the foliage at least once a week. Add a little sweet milk to the water. This will give a gloss to the foliage that will add much to its attractiveness.

Next to the palm in popularity is the Boston fern. This is a favorite with every one who succeeds in growing it well, because of its great profusion of fronds, three or four feet long, which droop over the pot gracefully and make the plant a veritable fountain of foliage. Another reason for its great popularity is its ease of culture. Give it a light, spongy soil and a moderate amount of water and it will make quite a rapid growth. It is not an exacting plant in any respect, and will do well in almost any kind of soil except those which contain a large amount of clay. But it does best in a soil that is light and porous.

Never give enough water to make the soil muddy.

The third place on the list ought to be given to the ficus, more commonly known as rubber-plant. This is also of easy culture. It never fails to attract attention by its large, thick, glossy, dark-green foliage.

The aspidistra ought not to be overlooked. Because it does not grow to a considerable height, like the ficus, it has not attained the popularity of that plant, as yet, but it will be a universal favorite as soon as its merits become fully known. Its great masses of dark-green foliage are extremely ornamental, and the fact that it is the one plant in the list of decorative plants suitable for amateur use that can be said to almost take care of itself will appeal to those who want something that can always be depended on to look well. Give it enough water to keep the soil in its pot moist at all times, and that is about all it will ask of you. It is not at all particular as to the soil given it, and it seems to care very little for direct light. It will stand more abuse and neglect, and flourish under it, than any other plant I have any knowledge of.

XI

THE BULB-BED

THE bulb-bed should be located in some part of the yard where there is good, natural drainage or where it will be an easy matter to secure an artificial one by excavating the soil to the depth of a foot and a half and filling the bottom of it with material that will not readily decay, such as broken brick, crockery, or crushed stone. The object is to provide escape for surplus water from the soil above in spring. No bulb can be grown successfully in a soil that is unduly retentive of water about its roots.

In arranging for artificial drainage, after filling the bottom of the excavation with five or six inches of drainage material, the soil that was thrown out should be returned to it, working into it, as this is done, a liberal amount of good manure. The best of all fertilizers for all bulbs is old, well-rotted barn-yard soil. If this cannot be obtained

make use of some good commercial fertilizer. As soils differ greatly, and not all commercial fertilizers are adapted to all soils, I would suggest that some person in the community who understands the nature of its soil and the kind of fertilizer which suits it best should be consulted, and that the maker of a bulb-bed should be governed by his advice as to what kind to make use of. It is not well to let guesswork govern in the matter.

If possible, choose a location that slopes toward the south. This will give the bed the benefit of sun warmth early in the season, and the plants in it will be greatly helped by it.

It is quite important that the soil for bulbs should be made fine and mellow and that whatever fertilizer is used should be thoroughly incorporated with it. While it is true that most bulbs will do fairly well in soils of only moderate richness, it is impossible for them to do themselves anything like justice in it. Keep this fact in mind, and be generous in your supply of plant food.

The proper time to plant bulbs is in late September and early October. This enables them to make a strong root-growth before winter sets in. Such a growth puts them in proper condition for flowering in spring. Late planting does not admit of the comple-

tion of root-growth in fall, consequently some of it has to be made in spring. This obliges the plants to divide their work at that season between root-growth and flower production, and as these processes ought not to go on at the same time the result is an inferior crop of flowers and unsatisfactory bulb-development. I cannot urge too strongly the advantages of early planting.

The best bulbs for the amateur gardener are Holland hyacinths, tulips, and the narcissus. These are very hardy and floriferous, and succeed in almost all soils. And they are so beautiful that they deserve a place in all collections. They should be set about four inches below the surface, and about that distance apart.

Before winter sets in the bed should be covered with leaves, straw, or coarse litter from the barn-yard. Let the covering be about six inches deep. It will not prevent the ground from freezing, but it will prevent it from freezing and thawing alternately. If this takes place the bulbs are pretty sure to be torn from their places, and their tender, recently formed roots broken off.

Of course there are other bulbs than those of which I have made mention that are well worth growing, but they are not as well

adapted to amateur culture as those are, therefore I would advise the beginner in bulb-growing to confine her attention to the hardiest and least particular kinds until she feels that her success with them justifies her in "branching out" and making an attempt to grow those which require greater care and a good deal more of it.

XII

GETTING READY FOR WINTER

A SUPPLY of good potting-soil should be put into the cellar for use during the winter if needed. Often a plant will have outgrown its pot, thus making immediate repotting necessary in order to continue the healthy condition of it, but if there is no good soil at hand it will be obliged to do the best it can until spring comes, and by that time it will have received a check from which it will be a long time in recovering, and quite often it will die as the result of failure to give it proper attention when it was in most need of it. If you have a supply of potting-soil in stock there will be no excuse for not caring for your plants promptly when the advisability of repotting is indicated.

A very satisfactory potting-soil is composed of garden loam, two parts; leaf-mold or its substitute, one part; and clean, coarse sand, one part. To this should be added some well-rotted cow manure, if obtainable.

Work the compost over until all its ingredients are thoroughly mixed. The quantity of manure required to make the compost sufficiently rich to suit all kinds of plants will depend on the quality of the loam used. If that is quite rich, do not add much manure to it. If only of moderate richness, more can be used. This is a matter which will have to be decided largely by results. If the plants you put into the compost make a strong, healthy growth, the soil is rich enough. If the growth does not seem strong, more plant food is required.

A good substitute for cow manure is fine bone-meal in the proportion of a pound to a bushel of soil. A good substitute for leaf-mold will be found in that portion of old sward from pasture or roadside which contains fine grass roots. Turn the sward over and cut away this part of it, to mix with the loam and sand. These roots will be found almost as rich in vegetable matter as pure leaf-mold.

Some persons may wonder why I advise the liberal use of sand, which is not supposed to contain much nutriment. I do it because I have found from long experience in growing plants that sand not only facilitates good drainage, but enables air to get to the roots of

the plants as it never can do when the soil is not light and porous. And sand is a sweetener of soil, as is charcoal. Of course not all plants are alike in their requirements. Roses, for instance, like a rather heavy, compact soil. In growing them use the loam without sand. If I had to choose between sand and manure in making potting-soil for nearly all plants adapted to window culture, I would take the sand.

It is not too late to set out seedling plants of such perennials as phlox and hollyhock if care is taken to lift enough soil with them to insure against disturbance of their roots. Work of this kind can be done to better advantage now than in spring.

Now is a good time to go over the shrubs and give such pruning as may seem necessary. As a general thing, the less pruning given a shrub the better, for if left to itself it will do a much better job of training than we are capable of doing for it. But it is advisable that all shrubs should have the old, weak wood cut away each season. This is pruning for health—not for symmetry. Nature has a keener eye for the symmetrical than we have, therefore we are justified in leaving the training of our shrubs to her, or to the shrubs, acting under her advice.

Oleanders, fuchsias, hydrangeas, chrysanthemums—in fact, all hard-wooded plants that are summer and autumn bloomers—should be wintered in the cellar. Here, if the temperature is kept low, they will be practically dormant for several months, thus getting the same kind of a resting-spell that comes to deciduous plants out of doors during winter. Give just enough water to prevent the soil from becoming dust-dry. Do not be frightened if some of them shed their foliage while in cold storage; outdoor plants do that. If the place in which they are kept can be made dark, all the better.

Dahlia roots should be spread out on swinging-shelves of wire netting when stored away. Never heap them together, and never put them on the cellar-bottom, for it is likely to be too damp there. Mold, which is largely the result of dampness, must be guarded against, hence the advantage of hanging-shelves which will allow a free circulation of air about the roots spread out on them. Look them over at least every week. If you find any that show signs of mold or decay, separate them immediately from the healthy ones. If allowed to remain, the diseased condition will surely be communicated to the entire mass of roots.

All plants that seem to need repotting should be attended to before winter sets in. This will give them plenty of time to become thoroughly re-established before the winter campaign is on, and it will not be necessary to disturb them in the middle of the busy season.

All the windows at which plants are kept should be looked over before cold weather comes, and made proof against cracks and crevices that will let in cold air. It is a good plan to provide these windows with storm-sash. If this is done, the plants can be allowed to stand with their leaves against the glass, as the air space between window and storm-sash will prevent frost from forming on the inner panes.

Gladiolus roots should be stored in boxes of perfectly dry sawdust or buckwheat hulls and kept in a dry and rather cool place. Never put them in the cellar. Be careful to see that no frost gets to them. Or they can be wrapped in paper and put into paper bags and hung in a closet. If kept in a very warm place over winter they frequently become so dry that there is little vitality left in them by spring.

Tuberous begonias and gloxinias will most likely have ended their flowering season by

this time. Allow the soil in their pots to become dry. Then set them away in a dark closet without in any way disturbing the tubers. Treated in this manner, they winter much more satisfactorily than when the roots are taken out of the soil. In spring, when the plants are brought to the light and water is given, they will soon send up new sprouts. Then the roots should be shaken out of the old soil and supplied with fresh earth.

In covering roses do not make use of leaves if there happens to be anything else at hand that will afford the necessary protection. Leaves would make an ideal covering were it not for the fact that it is almost impossible to keep mice from working in them. Last season I lost every rose-bush that was covered with leaves. The mice had gnawed all the bark from them. Covering the bushes with dry earth is preferable.

XIII

BULBS FOR WINTER FLOWERING

WHENEVER any one writes me that she is fond of flowers, and would be delighted if she could have some in winter, but that she fails to get satisfaction from the ordinary house-plant, I always advise her to try bulbs. For I know that one is reasonably sure of getting fine flowers from this class of plants, provided we are willing to give them the right kind of treatment. One will get more flowers from them than she can expect from the ordinary collection found in the average window garden—we can have them through the entire winter if we plan for a succession—and we have few flowers that equal those of the bulbs in beauty. And, last but not least, they require really less care than is demanded by the majority of house-plants.

Three things are essential to success in the culture of bulbs in the house:

First—Good stock.

Second—Good soil.

Third—Root development before top growth takes place.

The first essential is readily met if you order your bulbs from reliable dealers—dealers who have established a reputation for honesty and the handling of bulbs of the best quality only. Each season we see advertisements in which large collections of bulbs are offered at very low prices. Beware of them. As a general thing the wonderfully cheap ones are as cheap in quality as they are in price, and from such a grade of bulbs you cannot expect fine flowers. The best bulbs are imported ones, grown largely in Holland, where both soil and climate are admirably adapted to the production of first-class stock, and where the matter of bulb-growing has been reduced to almost a science. These will cost a little more than American-grown ones, but they are well worth the difference in price. Inferior stock will give inferior flowers every time, and what one wants in forcing bulbs in winter is the best flowers possible.

The item of good soil is a most important one. Bulbs can be grown, after a fashion, in almost any kind of soil, but they can only be

grown to perfection in a soil whose basis is a sandy loam made quite rich with some good fertilizer. Heavy soils can be made lighter by mixing sharp, coarse sand with them until the mixture, after being squeezed tightly in the hand, will readily fall apart after pressure is relaxed.

The ideal fertilizer for all bulbs is old, thoroughly rotted cow manure. On no account should fresh manure of any kind be used. But it is not always possible to procure manure from the cow-yard, and those who are unable to do so will find fine bone meal a good substitute. Use this in the proportion of a pound to a half-bushel of soil. Whatever fertilizer is used should be thoroughly mixed with the soil. Be very sure that the latter is free from lumps.

In potting bulbs for winter use I would advise putting several in the same pot. Fill the pot loosely with soil, then press such bulbs as those of the hyacinth, tulip, and narcissus down into it just their depth. As many can be used in a pot as can be set on the surface of the soil in it so that they just touch one another. Do not attempt to make the soil firm about them or beneath them. If this is done their tender roots will often fail to penetrate it, and the consequence will be that

the bulbs are hoisted upward as the roots develop. This should be guarded against by having the soil so light that the young roots will find no difficulty in making their way into it. I advise the use of several bulbs in the same pot because it gives a greater amount of bloom in a limited space, and greatly economizes in soil, pots, and labor.

When you have put your bulbs into the soil, water them well, and then set the pots away in a place that is *cool* and *dark*. Some persons consider this unnecessary, and put their plants in the window as soon as potted. This is all wrong. Storage in a cool, dark room until roots have formed is absolutely necessary to success. The reason for it is plain if we stop to think that the bulbs must have roots before they can make a satisfactory growth of top. Roots first, flowers afterward.

As a general thing bulbs will have to remain in cold storage at least six weeks before it will be safe to bring them to the windows in which they are to bloom. But no definite time can be assigned. One must examine the plants from time to time, and on no account should they be taken to the light until the pot is filled with roots and indications of top growth are seen.

It may sometimes be necessary to water

them while in the dark room, but as a general thing one watering—the one given at potting-time—will be sufficient. Too much water while in the dark may cause serious trouble. But this, like the length of time allowed for root formation, is a matter that must be left largely to the good judgment of the grower.

When plants have been brought from the cellar, or wherever they have been placed while roots were forming, they should not be put into very warm rooms. Too much heat, combined with the effects of light and water, will result in rapid growth, which is not a healthy one. In warm rooms the flowers will be short-lived.

I have spoken of planting for a succession of bloom. This is important if you want flowers throughout the winter. Pot a few at intervals of ten days or two weeks, beginning the middle of September or first of October. If this is done it is an easy matter to keep the window supplied with flowers from the holidays to the advent of spring. A little calculation will enable one to plant enough to meet the demand and to regulate the planting intervals in such a manner as to bring about the succession necessary to cover the season.

What has been said above may seem so

elaborate to the person who has never grown bulbs for winter flowering that it may give the impression that what is really a simple matter is too difficult for the amateur. But if what I have written is read over carefully and given a little thought you will readily see, I think, that most of what I have said has been devoted to giving reasons for the treatment outlined, so that the "whys and wherefores" may be understood. And it will be seen that it all resolves itself into a very simple proposition—*viz.*, good stock, good soil, and cold storage until roots have formed—the three essentials spoken of at the beginning of this chapter. Nothing is required that the beginner in floriculture is not equal to. Potting the bulbs is a much simpler matter than potting a plant, and the preparation of soil for them involves no more labor or skill than the preparation of a soil for a geranium to grow in.

Now as to kinds to grow. I advise the Holland hyacinth, preferably the single varieties; the Roman hyacinth, the white variety only; early tulips; and five varieties of the narcissus—Van Sion, Horsfeildii, empress, trumpet-major, and paper-white — and the Bermuda, or, as it is more commonly called, Easter lily.

The double Holland hyacinths are too double to be pleasing to a person who likes individuality in a flower. The Roman hyacinth is more graceful than any other member of the family. The early tulip is much surer to bloom well than any of the others described in the florist's catalogue.

The Easter lily requires a treatment somewhat different from that advised for the other bulbs. It sends forth two sets of roots, one from the base of the bulb and one from the stalk sent up from the bulb. In order to give each set of roots a chance we have to set the bulb deep down in the soil. Let the pot be only half filled with earth when the lily is put into it, press it down as directed for the other bulbs, and add no more soil until growth begins. Then, as the stalk reaches up, put more soil into the pot, and continue to do this until it is full. In this way give the two sets of roots the support they need.

If bone meal is used as a fertilizer, be sure to get the finely ground article. Coarse bone meal is not what you need, as it does not give an immediate effect.

XIV

THE WINTER WINDOW-GARDEN

IN fall, when we bring in the plants that have been growing out of doors during the summer, they usually look healthy, and we congratulate ourselves that we are likely to have a fine crop of flowers from them later on. But soon we see some of their leaves turning yellow and falling off, and though they may make considerable growth, it is unsatisfactory because it is spindling and weak. If buds form, they are pretty sure to blight before reaching maturity, and, instead of having the fine, floriferous plants we had counted on, we have a window-garden that is more noticeable for its discouraged look than for anything else.

The owner of such a garden too often aims to remedy the unfavorable conditions which exist in it by applying some kind of fertilizer to her plants. By doing this she simply makes a bad matter worse, for the

application of any kind of plant food to weak and debilitated plants is on a par with giving rich food to a person whose stomach is not in a condition to make proper use of it. No fertilizer should ever be given to a plant that is not in healthy condition; neither should it be given to dormant plants. When active growth begins, then, and then only, should they be stimulated to stronger growth by feeding them well. But care must be taken to not overfeed them. Give only enough to bring about a vigorous growth, but not a rapid one, for that is pretty sure to be a weak one from which there will be a reaction by and by, from which your over-stimulated plants will suffer severely. Most growers of house plants are too kind to them. In this respect they are like a good many mothers who injure their children by over-indulgence through mistaken ideas of kindness.

In applying fertilizers, begin by giving them in small quantities. Watch their effect upon the plants. If their leaves increase in size and take on a rich color, be satisfied that you are feeding your plants quite enough for their good.

The impression prevails to a considerable extent that by fertilizing plants we secure more flowers from them than we would be

likely to do if no fertilizer was used. Such is not the case. Feed a plant rich food and it will be likely to make a vigorous growth of branches and foliage at the expense of flowers. The aim should be to simply keep the plants growing well. If this is done, whatever flowers they produce will share in the general benefit of the application, but they will not be increased in quantity by it.

One reason why the plants in the winter window-garden fail at the time when we think they ought to be doing their best is lack of fresh air. If one stops to think about it one will not wonder that her plants have a sickly look. We keep our windows closed tightly, thus keeping out the air that the plants need, and we put storm-doors on every entrance. In fact, we do everything in our power, seemingly, to prevent fresh air from getting to them, and then we wonder why our plants do not flourish. We lose sight of the fact that plants breathe, the same as human beings do. A little intelligent consideration of the conditions under which we undertake to grow them ought to convince us of the mistake we make in expecting them to do well without a regular supply of fresh air. While it is well to make the windows at which plants are kept tight enough to prevent draughts of cold

air from coming in upon them, it is not only advisable but absolutely necessary, if we would grow healthy plants, to give them a liberal supply of fresh air every day, and preferably several times a day. This can be done by opening a door or a window at some distance from them, and letting fresh, pure air rush into and fill the room. If possible, let down a window a few inches from the top on the side of the room opposite from where the air comes in, to allow the vitiated air of the room to readily escape before the onrush of outdoor air. In this way it is an easy matter to completely change the character of the air in a room in a few minutes, and in doing it we benefit the human occupants of the room quite as much as we do the plants in it. If the owner of every window-garden would make it a daily practice to give her plants an air-bath she would be surprised at the speedy improvement that would be noticeable in them.

We weaken our plants, as we do ourselves, by keeping the temperature of our rooms too high. We are not satisfied with a comfortable warmth. We want heat enough to keep us constantly conscious of it by its intensity. This is all wrong from the health point of view. What ought to be done is to

install a thermometer in every room, and so regulate the amount of heat that all are kept at summer warmth by arranging for a system of ventilation that will act automatically when the thermometer goes above a certain point. This system is speedily coming into general use, and gives most excellent satisfaction. Where it is not in use, the temperature can be kept somewhere near where it ought to be by opening doors or windows from time to time, as already spoken of. Keep in mind that too much heat and too little fresh air will kill almost any plant in time, and the two, working together, will, nine times out of ten, make any window-garden a comparative failure.

Care must be taken in watering plants in winter. Those which are dormant, or are making but little growth, will require very little water. Those in active growth will need more. The only way to tell how much to give is to watch your plants closely, and observe the effect of the applications given. When the surface of the soil takes on a dry look it is safe to conclude that the roots of the plant in the pot have made use of most of the moisture in it, and that more water should be given. Then give enough to make the soil moist all through, and withhold

further applications until the dry look appears again. Never form the habit of watering your plants every time you happen to think about it, and then apply just enough to make the soil look wet on its surface. If this is done you will never grow good plants, for only the surface roots will get the moisture they need. Have a stated time for watering, and let the appearance of the soil govern the amount used.

XV

THE INSECT ENEMIES OF PLANTS

EVERY woman who attempts to grow flowers in the house will sooner or later have to wage warfare against insects.

Perhaps the first battle will have to be fought with the aphis, or plant-louse. This insect sucks the sap—the life-blood of the plant—from stalk and leaf, and soon, if let alone, it will exhaust the vitality of the plant to a degree that is wholly imcompatible with health. In fact, if allowed to have its way, it will kill your plants, for it propagates its species with such rapidity that a plant will soon be literally covered with them. We used to kill off these insects by fumigating the plants infested with them with tobacco smoke, and in doing it we made ourselves about as sick as the insects were, and the nauseating fumes of it clung to everything in and about the house for days. Nowadays we make use of the nicotine principle of tobacco

in our warfare against the aphis, but in a manner that leaves out the objectionable features of fumigation. Tobacco manufacturers have prepared an extract of the nicotine in the plant, and put it on the market under the name of nicoticide. All we have to do when we want to make use of it is to put a small quantity in water, and spray our plants with the mixture. Every aphis that it touches will die, and those that it fails to reach will take the hint that they are not wanted and that their presence will not long be tolerated, and the first you know they will have disappeared.

Instead of waiting for the attack of the enemy I consider it good policy to anticipate it by frequent applications of the tobacco-bath. It will be found easier to keep the enemy away than to rout it after it has established itself on your plants.

The red spider is another insect that does deadly work in the window-garden, especially in rooms where the temperature is high and there is little moisture in the air—a condition that generally prevails in the ordinary living-room. This pest is so small that its presence is seldom suspected until considerable injury has been done to the plants it works on. If you notice that leaves are turning yellow and

dropping off, and that more and more of them fall each day, you had better look into the matter. Examine some of the fallen leaves. If you find tiny webs on the under side of them you may be quite sure that the spider is responsible for the condition your plants are in. Look at some of the leaves that are yellowing, but have not yet let go their hold, and you will be quite likely to find little red specks on them. These specks resemble grains of fine Cayenne pepper more than anything else. Watch them for a while and you will find that they are living organisms. It seems hardly possible that such tiny creatures can do much harm to a strong plant, but the fact is that there is no more voracious enemy of plant life in existence. Here the tobacco-bath does not come in play. Cold water is all the insecticide we need. Spray it over every portion of the infested plants daily, until they again take on a healthy look and begin to grow. The spider will not stay long in a moist atmosphere. Make it moist and keep it so by the liberal use of water sprayed upon your plants, and you will have very little trouble with this dangerous pest. But if you neglect to use water regularly and freely the probabilities are that your window-garden will look rather sickly by spring.

Scale is an insect that often attacks plants having thick, firm-textured foliage, like the oleander, lemon, ivy, ficus, and palm. It is a flat creature, looking more like a fish-scale than anything else, hence its name. It attaches itself to the leaf and sucks the life out of it. The best weapon to fight this enemy with is an emulsion made as follows: shave thinly half a pound of white soap; pour a little water over it and set it on the stove to liquefy. When the soap is melted, add to it a pint of water and bring to a boil. When boiling, add a teacupful of kerosene and three tablespoonfuls of the tobacco extract. These ingredients, under the effect of heat, will form an emulsion that will unite readily with water. Use in the proportion of one part emulsion to fifteen parts water. Apply to the infested plants with a soft cloth or a camel's-hair brush. Be sure that some of it gets to all parts of the plant. Two or three applications may be necessary. Prepare a quantity of it and keep it on hand for use when needed.

The emulsion spoken of above is an excellent remedy for the ills the rose is heir to during the early part of the season. If Paris green is sprayed onto the plants the foliage is frequently burned by it. If kero-

sene is mixed with water and applied, the oil will seldom emulsify perfectly with the water, and wherever a drop of it falls on leaf or bud it will do quite as much damage as would the bug or worm you are fighting. Hellebore is never to be depended on. The kerosene-tobacco-soap emulsion will be found safe and effective.

Worms in the soil of pot plants can be got rid of by the use of lime-water. Put a piece of *perfectly fresh* lime as large as the ordinary coffee-cup in ten quarts of water. If fresh, as it must be to be of any benefit, the water will seem to boil for a little while. By and by a white sediment will settle to the bottom of the vessel, and the water above will be clear. Pour this off and apply enough of it to each plant to saturate all the soil in the pot. Plug up the drainage hole in the bottom of the pot before the application is made, that the water may be retained long enough to do its work. Repeat the application if necessary.

XVI

GARDENING FOR CHILDREN

IF you want to keep children out of mischief give them a little garden. One that they can call their own will afford them far more pleasure than they get out of working in *your* garden. Of course they will not be expected to go ahead with garden work at first and make much success at it without assistance from some one, and by object-lessons, but they will soon master the fundamental points of it, and when they have done that they will surprise you by the facility with which they pick up the information that grows out of their early experience and the amount of work that they will accomplish all by themselves.

And you will be pleased to see how interested they are in the new undertaking. It will not seem like work to them. It will be play, and play of such a healthy character that you can well afford to ignore soiled

clothes, and hands that have caught the grime of the soil, and faces on which sweat and soil have met on common ground and formed an intimate partnership. The healthy color of the faces of the children who work out of doors, and the excellent appetites that they bring to the table, will convince you that gardening is the best of all tonics for them.

And you will be gratified to know that they are learning more from the great book of Nature than they would ever learn in the schools. They are learning things at first hand, for Nature will take charge of the little pupils and not trust her kindergarten work to an assistant. Nine children out of ten who have a garden to work in will become more interested in it than in all the fairy-books that were ever written. For are not the processes of germination and growth going on before their eyes akin to magic? The miracle of life is being performed before them every day, and they are taking part in it. That is what will make it so delightful to them. They have formed a partnership with Nature in miracle-making.

Parents who have only a hazy notion of garden-work may think themselves incompetent to teach their children. But if they set out to do so they will soon find that

they are daily learning enough to make them safe teachers for the little folks. And the best of it will be that they themselves are getting quite as much good and pleasure out of it as the children are.

Give the boys and girls good tools to work with. Never ask them to make use of those you have worn out or found worthless. Something quite as good as you would provide for yourself is what should be provided for them. They will appreciate a good thing, be very sure, and the fact that they have it will be one of the best possible incentives to work. Supply them with good seed. And do not fail to encourage them by giving all the credit justly due them for what they accomplish. Children like to know that their efforts are properly appreciated. We grown-ups and the children are very much alike in that respect.

XVII

HOME AND GARDEN CONVENIENCES

THERE are many ways in which work in the garden and about the home can be varied in such a manner as to give a variety of comparatively new and pleasing effects with so little trouble and expense that the amateur gardener and home-maker who would like "something new" will, I feel sure, be delighted to undertake some of them.

One is a floral awning for the windows which are exposed to strong sunshine. A frame is made of lath, the width of the window and half its depth, by nailing four of the strips together in a square and then fastening other strips across it in a diamond or lattice fashion. Attach this frame to the top of the window-casing by door-butts. Then push the lower part of it away from the window until you have it at the angle at which a cloth awning would hang when dropped, and support it in that position by running strips of

wood from each corner to the sides of the window-frame.

If such vines as morning-glory, flowering bean, and cypress are trained up each side of the window until they reach these supports, it will be an easy matter to coax them up them and from them to the awning's framework, which they will soon cover with foliage and flowers. Such an awning will be found quite as satisfactory as one of cloth, so far as shade is concerned, and, as for beauty, there is no comparison between them, for the ordinary awning of striped cloth is never ornamental. A floral awning is to the upper part of the window what the window-box of plants is to the lower portion of it, and the two can be used in combination with most delightful results. Indeed, they belong together, and one without the other only half carries out the scheme of window decoration.

Such awnings will be found as satisfactory for exposed doors as for windows. The boys of the family—or the women of it—can make them and put them in place, and the cost of them will be so small, compared with their ornamental and practical value, that one season's trial of them will make them permanent features of home-beautifying thereafter. I would advise planing the strips of

lath and giving the frames a coat of green or white paint before putting them in place. Green paint will make them unobtrusive, and white will give a pleasing color contrast. If they are taken down in fall and stored in a dry place over winter they will last for a good many seasons.

As a general thing the front gate, if there is one, is not particularly ornamental. But it can easily be made so by setting posts ten or twelve feet tall at either side, and attaching to the top of them a double awning-frame similar to that advised for windows. Let these frames meet at the top and slope outward and downward, roof fashion, and have supports running to each outer corner from the posts. When vines are trained up the posts and over the frames, and are allowed to droop in graceful festoons of foliage and flower from them, the effect will be charming. Here is where the wild cucumber—the most rapid climber of all our annuals—will be able to do most effective work. I would advise the use of hardy vines for positions of this kind, as they will be attractive from the beginning of the season, while an annual has to be given considerable time to grow before it becomes equal to the task assigned it.

Garden-seats ought to be a feature of all home grounds large enough to admit of them. And these seats can be made as ornamental as the gateway just described by providing them with awnings large enough to afford complete shade. Of course, where there are trees to furnish shade such awnings will not be needed—and the logical place for a garden-seat is under a tree, if there is one—but on grounds where there are no trees to furnish shade, such protection from the heat of summer sunshine as these awnings will afford becomes more a necessity than a luxury. As it is, they are both ornamental and useful, and the ease and cheapness with which they are made commends them to all who believe in the value of "little things" in making home attractive and pleasant.

Often it is desirable to furnish certain portions of the home grounds with screens large enough to shut off the public view. These should have frames of a size that guarantees strength. Lath put on in lattice fashion will make a good covering for them, but it will not be strong enough to insure durability in itself, hence the necessity of a more substantial framework. It is always advisable to paint them before covering them with

vines. As screens of this kind are generally built with a view to permanence, I would advise covering them with hardy vines, like ampelopsis, *Clematis flammula* and *C. paniculata*, aristolochia, or trumpet honeysuckle.

If low screens are wanted anywhere about the place, as a dividing factor between the flower and vegetable gardens, for instance, sweet-peas will make a charming covering for them.

Large screens that are intended to separate the ornamental portions of the home grounds from the not generally attractive yards at the rear can be made extremely effective by training rambler roses over them.

One of the most attractive features about the home of the author of this book is the fence which divides it from the property of his next-door neighbor. When the lawn was made, cedar posts were set along one side of it, and on these woven-wire netting was stretched. This netting was about four feet wide and of a rather heavy grade of wire. Small plants of ampelopsis were set out along it, about twenty feet apart. As fast as branches were thrown out they were trained out and in through the meshes of the netting.

In one season the plants made enough growth to meet one another, and the second season the netting was completely covered. The result has been extremely satisfactory. Throughout the summer this fence has the appearance of a closely clipped hedge of luxuriant green. In fall it is a mass of scarlet and crimson, quite as brilliant as the bed of geraniums near by. It is vastly more ornamental than a fence of wood or iron, and makes an entirely satisfactory substitute for a hedge that it would take years to grow. In some respects it is more satisfactory than such a hedge would be, as it requires no annual shearing to keep it in proper shape and condition.

XVIII

GARDEN DON'TS

DON'T let your springtime enthusiasm lead you to undertake more than you *feel quite sure* of being able to carry out. Keep in mind the fact that there will be work to do all through the season in order to make your garden a success, and think over what the result will be if you fail to give your plants all the care they need after you have got them well under way. Don't give them a chance to say that you haven't given them fair treatment because your enthusiasm waned with the season.

* * *

Don't attempt to grow all the plants that the florists describe so attractively in their catalogues. Concentrate your efforts on the best ones—that is, the ones best adapted to amateur gardening. Give these the best possible care. This advice applies with equal pertinence to all phases of gardening, outdoors or indoors.

Don't pattern your garden after your neighbor's. Think out original features for the garden you propose to make, if you choose to do so, but don't aim to be so extremely original that the originality of it will attract more attention than the flowers in it. These should receive first consideration always.

* * *

Don't waste your time on "carpet-bedding" unless you make use of plants with colored foliage in carrying out your designs. Flowering plants are practically worthless for this purpose, as they have such a tendency to reach out beyond the limits assigned them that all distinctness in the outline of your pattern will soon be lost sight of. About all that seems worth while for the amateur gardener to do in the arrangement of her plant is to so use them that strong masses of color can be produced. If care is taken to choose those of harmonious colors, these can be so arranged as to heighten the general effect by contrast.

* * *

Don't set out to have a garden or to grow house plants unless you have the true gardening instinct. By that I mean a love for plants and flowers that would make you *attempt* to grow them under circumstances

which your own judgment tells you make success impossible. The woman who tries to grow a geranium in a tin can in a window four or five stories up in the air because of her love for flowers would be almost sure to make a splendid success of a garden on the ground if she had one. But the woman who attempts to grow a plant because her neighbors do so, and who is honest enough to say to herself that "it's more bother than it's worth," will fail because she lacks the true incentive. Such persons ought not to undertake the cultivation of flowers. They cannot grow them with any degree of success, for flowers know who loves them, and will absolutely refuse to flourish under the care of those who do not want them for their own sweet sakes.

* * *

Don't fill your windows to overflowing. Give each plant enough elbow-room to admit of its displaying its charms effectively. A crowded plant is never a symmetrical one, and one really symmetrical is worth a score of poorly shaped ones. The fact is, a window of ordinary size cannot satisfactorily accommodate more than eight or ten plants of ordinary size without crowding. There should be space enough between them to allow the sunshine to get to all portions of them. A

free circulation of air among them is quite important.

* * *

Don't be a plant-beggar. By that I do not mean that you are not to "swap" plants with your neighbors if it is mutually agreeable to do so. When I speak of a "plant-beggar" I have in mind the person who depends upon her plant-growing friends for enough plants to keep her window well stocked, and her garden also. As soon as she discovers that you have a plant that she would like she does not hesitate to ask for a root or a cutting of it. She never stops to think that you are trying to grow the plant for your own pleasure. It doesn't matter to her how much it interferes with its satisfactory development in complying with her request. If she gets what she wants she is satisfied. The probabilities are that when her plant gets to be as large as yours was when she asked you to divide it with her she'll not hesitate to refuse the woman who suggests that she'd "like one just like it—won't you let me have a slip?" That there are persons quite as selfish as this cannot be denied. But they ought not to be encouraged. Don't gratify them in their unreasonable demands simply because you

are afraid of being considered "small" and "stingy."

* * *

Don't fail to have a corner in your garden devoted expressly to plants from which to cut for friends and the sick and shut-ins. Perhaps it is more a fancy of mine than anything else, but it has always seemed to me that plants grown for this purpose know what use they are to be put to and do their best in order to help carry out the plan of the person who grows them. If we who have all the flowers of our own that we care for could only know what a vast amount of pleasure we can give our less fortunate neighbors by dividing our supply with them, we would be more liberal than we are.

* * *

Don't keep fuchsias in the window in winter, for they are not winter-flowering plants, and the space they will occupy might better be given up to plants from which we can reasonably expect blossoms. They should go into the cellar in November, along with oleanders, hydrangeas, chrysanthemums, and plants of similar habit, there to remain until March. Then they can be brought to the light, watered, and again started into growth. It is well to cut most plants that have been

wintered in the cellar back at least half, and allow them to renew most of their branches. While in cold storage they should be given just enough water to prevent the soil from becoming really dry, and no more. Keep them in the dark, if possible, and in a cool place. Do not allow the temperature to go below the frost-point, however.

* * *

Don't think because you have only a little bit of ground that it isn't worth while to attempt having a garden. Some of the most delightful gardens I have ever seen were small ones. You will be surprised to find how many plants can be grown in a very small space. Utilize all the nooks and corners about the place for plants.

* * *

Don't depend on home-grown seed if you want the best in flowers. The seedsman knows just what to do to secure the best results in seed, and just how to do it. He also knows what *not* to do in raising seed for the market, and this the amateur gardener really knows nothing about. While we often grow fine flowers from seed of our saving, the fact remains that home-grown seed seldom gives entire satisfaction to the person who wants the best.

Don't invest your money in new plants until you are satisfied that they have all the merit claimed for them. As a general thing, the "novelties" sent out every spring at a high price are greatly inferior to the good old stand-bys. We seldom hear anything about them after the second season. Put your money into plants that you know can be depended on.

* * *

Don't attempt the culture of hanging-plants unless you are willing to give them the care they must have in order to be satisfactory. Plants suspended in the window, where the temperature is considerably higher than at the sill, speedily dry out, and after this has happened a few times they become diseased and finally die. It will be necessary to apply water daily and in sufficient quantity to saturate all the soil in the pot or basket. Because it requires special effort on the part of the owner to get to suspended plants, they are generally neglected. It is a most excellent plan to have them arranged in such a manner that they can be let down into a tub of water and left there until the soil has absorbed all the water it can retain. This can be done by cords running over pulleys in the ceiling. Try it. Hanging-plants are al-

ways pleasing when healthily grown, and the window-garden that is without them is not living up to its privileges.

* * *

Don't "fuss" with your plants too much. See that they get all the water they need, as much sunshine as possible, plenty of fresh air, an occasional application of some good fertilizer, and shower them frequently to keep them clean, and be satisfied with this treatment. They object to being treated as some mothers treat their children, who would be much better off if they were let alone after actual wants were provided for. Don't coddle your plants.

* * *

Don't start dahlias into growth in the house early in the season, thinking that you are going to "get the start of the season" by so doing. We used to think that, because the dahlia came from a country where the summer was long, we must get it to growing in March or April, and we set the tubers out in pots and boxes and forced them to make a rapid and weak growth so early in the season that long before it was safe to put them out in the garden they were poor, spindling things, with just enough vitality in them to make it possible to say that they were alive. When

they were planted out the change from indoors to outdoors had such a debilitating effect on them that for weeks they were undecided whether to live or die. If they lived we considered ourselves fortunate if we got a dozen flowers from each plant. Nowadays we understand the plant better. We don't attempt to start it in the house. We wait until the weather and the ground are warm and then we plant the tubers in the garden where they are to grow and bloom. We make the soil very rich. The plants begin to grow shortly after being planted, and in late August they come into bloom, and all through September they yield such a profusion of flowers as we never thought of getting from the plants when grown after the old method. The dahlia is one of our very best late-summer flowering plants when well grown. It must have a rich soil—it must not be allowed to get dry at the roots at any time—and it must be given substantial support, as its stalks are extremely brittle and easily broken down by hard winds and heavy rains. Dahlias are very effective when planted in the border among shrubs and perennials. There are few plants with a wider range of rich and brilliant color. By all means give them a place in your garden.

Don't sow hollyhock seed in the spring expecting to get flowers from your plants the same season. They will not bloom the first year from seed.

* * *

Don't allow your pansies to bloom—or *try* to bloom—during the hot, dry, midsummer season. They may produce *some* flowers, but they will be so inferior in quality that you will get no pleasure from them. I would advise cutting away all the old branches the latter part of July and encouraging the plants to renew themselves preparatory to fall flowering. If this is done, and strong, healthy growth results from the liberal application of a good fertilizer during August, you may expect a generous crop of large, fine flowers all through the autumn. If it is *not* done, and the plants are allowed to keep on trying to grow through the trying period of late summer, you will get few flowers and no really good ones.

* * *

Don't allow any plant to develop seed if you want it to keep on blooming after its first flowering period. The aim of all plants is to reproduce themselves, and this can only be done by seed development. If we interfere with the ordinary process of seed production

by cutting away all flowers as soon as they begin to fade, the plants will at once make another effort to perpetuate their kind, and, as the first step in this direction is the production of flowers, it will be readily seen that it is possible to make many of them bloom all through the season.

* * *

Don't expect good flowers of any kind unless you are willing to give them the care and attention they require. If you are not willing to do this, or if, for any reason, you *cannot* do it, don't attempt gardening. Have enough regard for the flowers to not undertake their culture unless you can do them justice.

* * *

Don't throw away plants of any kind. Somebody will always be glad to get those you have no use for.

* * *

Don't neglect a plant to-day and think you can make up for that neglect by being very good to it to-morrow. Plants must receive care *when it is needed*, and this care should be given regularly, instead of spasmodically, to be effective.

* * *

Don't begin to water your plants in your

garden in a dry season unless you can keep on doing so as long as the dry spell lasts.

* * *

Don't fail to keep close watch of your asters. Of late years many failures have resulted from the attack of a black beetle, which comes from no one knows where—comes so suddenly and does such deadly work in so short a time that the plants are often ruined before the presence of the pest is suspected. There is but one way of getting rid of this pest, and that is to make use of nicoticide, the standard remedy for all plant troubles of this kind. A small quantity of this extract of tobacco, diluted with water and sprayed over all portions of each plant, will effectually rout the enemy if applied promptly and thoroughly. Unless something is done as soon as the beetle is discovered, it will destroy every plant. Be on the lookout for it constantly, acting on the supposition that it will be sure to put in an appearance some time during the summer. Get ready in advance for prompt action against it by laying in a supply of the insecticide at the beginning of the summer.

* * *

Don't think that your house plants need repotting two or three times a year if they are

growing in good-sized pots. Once a year is quite often enough if you apply fertilizers at intervals of four or five months. Plants in small pots may outgrow their quarters, and these should be shifted to those of larger size when they have filled the old ones with roots.

* * *

Don't make the mistake of putting small plants in large pots, thinking that they will be benefited by it. Wait for them to signify a desire for more room by filling all the soil of a small pot with roots. A plant with a small, weak root-system is often seriously injured by giving it a large pot to grow in, as it is not in a condition to make use of all the nutriment in a large amount of soil. A plant treated in this manner will often develop a sort of vegetable dyspepsia as a result of giving it more food than it can digest properly.

* * *

Don't be in too great a hurry to obtain results. Some persons think to accomplish this by frequent applications of strong fertilizers in large quantities. This will force plants to a rapid and always unhealthy growth, from which, later on, there is sure to be a most discouraging reaction. Be content with a healthy growth, and give your plants a chance to make that naturally. More plants

are injured by overfeeding than from any other cause.

* * *

Don't think that you can learn all there is to know about gardening from books. Books will furnish the theory. You must contribute experience in order to attain success.

* * *

Don't neglect your plants while they are growing. Then is just the time to give them the training that is necessary to make them shapely. The fact is, plants are very much like children in the family. Let them have their own way about everything while they are growing up and you will find that when they have grown up they are not at all like what you would like to have them, in many respects, and you don't see how you are going to make them conform to your ideas of what they ought to be, since it is impossible to make children of them again and give you another chance at their development. Begin with the training of your plants while they are small, and train them as they grow.

* * *

Don't treat all your plants alike. Study their peculiarities and give them such treatment as will fit those peculiarities. To illustrate this idea: a calla likes a good deal of

water; a geranium is satisfied with a moderately moist soil; a cactus does best when allowed to get really dry at certain seasons. If we were to treat these three plants alike, what do you suppose the result would be? Don't ignore the peculiarities of your plants if you want them to do well.

* * *

Don't neglect to prepare for an annual invasion of your roses by bugs, worms, and insects. You can safely count on their coming, but if you are prepared for it you can speedily put the enemy to rout. The best plan is to act on the offensive. Head off the pests by making applications of nicoticide before they make their appearance. You can do this, for, if their advance-agent arrives and finds the tang of tobacco all over the plants, he will go back and advise the others to seek more agreeable quarters. Begin to spray your bushes early in the season, and keep on doing so until after the flowering period is over. There will be no likelihood of an invasion after that, as the enemies of the rose do their deadly work early in the season.

* * *

Don't get the idea for a moment, as so many do, that all you need to do to have a fine lot of plants is to put some soil—any

kind that happens to be handiest—in a pot, set out a plant in it, and, presto! you will have just as fine a lot of plants as your neighbor who searches here and there and everywhere until she finds just the kind of soil that experience tells her the plants must have if she would have good ones. She gives some of her time daily to caring for them, while you expect your plants to take care of themselves. That will never answer. If you do your share of the work the plants will do theirs, but you must not expect them to do all, any more than you must expect them to make a strong, healthy growth in a soil that is unsuited to their requirements or sadly lacking in nutriment.

* * *

Don't build up a great fire in stove or furnace if you discover that your plants have been nipped by frost, thinking to save them by "thawing them out." Heat at such a time is the very thing needed to complete the misfortune. Put them at once in a room where the temperature can be kept just a little above the frost-point, and shower them thoroughly with cold water. This will extract the frost from them so gradually that it will be possible to save many of them unless they are badly frozen. Keep them

in a cool room for three or four days. It may be necessary to cut away most, or all, of the branches of some of them. Unless the degree of cold to which they were subjected was sufficient to freeze the soil in the pot, many of them will throw up new shoots from their roots after a little; therefore don't throw out a plant that has been obliged to part with all its top until it has been given a chance to make a new start in life.

* * *

Don't put your house plants out of doors for the summer until the weather has become warm and can be depended on to remain so. The first of June will be quite early enough.

* * *

Don't plant them out in the garden-beds, thinking thereby to save yourself the work of taking care of them during the summer and of benefiting them at the same time. Of course they will take care of themselves there, and very likely make a much more luxuriant growth than they would in pots, but when fall comes and you have to lift and repot them you will find that more hard work is required of you than you would have expended on them throughout the summer if you had kept them in pots. As for the benefit to the plants—where will it come in? They will

have made such a rampant growth of roots that most of them will have to be sacrificed in reducing the earth containing them to the size of the pots you put them into, and this at the very time when the poor plants ought to be at their best in order to successfully withstand the unfavorable conditions resulting from the change from outdoors to indoors. Plants treated in this manner receive a check that they seldom fully recover from during the entire winter. Instead of saving yourself work and doing a kindness to your plants, you have done just the contrary.

XIX

A CHAPTER OF HELPFUL HINTS

IN some of the foregoing chapters I have had something to say about the advisability of using seed in which each color is kept by itself in order to secure the greatest possible degree of color-harmony in the garden.

Many persons tell us that they cannot afford to pay the extra prices which the seedsmen put on unmixed seed. It is true that it costs more than the seed in which all colors are jumbled together, and it is also true that plants grown from it are really no better than those grown from mixed seed, but the fact remains that it gives so much more satisfactory results, from an artistic standpoint, that it is not throwing money away, as some claim, to make use of it. Of course if one gets as much pleasure from a mass of color without regard to harmony as from fewer colors all in perfect harmony with one another,

it would hardly be worth while to invest more money in such seed. But where the finest possible effects are desired I contend that unmixed seed is cheapest, in that sense of the term that means the greatest satisfaction.

There is a way by which unmixed seed can be obtained without its really costing each person more than mixed seed. Every amateur gardener knows that more plants of a kind can be grown from one package of seed than a person cares for in the average-sized garden. Nine times out of ten only part of the seed in the package is sown and the rest is either discarded or given away to friends. Now if those who would like to secure the best results in gardening will get up a seed club among their flower-loving friends, and confine their selection to packages in which each color is by itself, the seed in those packages can be divided among the various members of the club, and each person will have enough to meet her requirements, and this at a less price than she would have to pay for ordinary mixed seed if she were to order alone, because none of the seed would be wasted.

Try the seed-club plan for a season and see if it doesn't work out to your satisfaction.

If you are likely to have more plants of a

kind than you care for, don't throw any of the seedlings away when you thin them out. There are poor children in every neighborhood that would be delighted to get them. Never waste any plants that are worth growing.

If a plant is wanted for low beds under the windows of the dwelling or near the paths, portulacca is about as satisfactory as anything I know of. It blooms with great profusion throughout the entire season. Its colors range from pure white through pink, yellow, and violet to dark crimson. It is a plant that seems to delight in locations exposed to the hottest sunshine, and in soils so lacking in moisture that ordinary plants would live but a short time in it. It is enabled to do this because of the succulent nature of its foliage. Indeed, the portulacca is a vegetable salamander so far as its ability to stand heat and drought is concerned. Those who have had experience with purslane in the vegetable garden will understand something about the nature of this plant, for the two are closely related.

In furnishing support for vines that clamber over the walls of the house, do not use strips of cloth, as so many do. The cloth is good for a season only. After the vines have

become large and heavy their weight will be sufficient to tear the cloth loose from the tacks that held it in place, especially after a heavy rain or in strong winds, and down will come the plant. It will be found impossible to put it back in place in anything like a satisfactory manner. For supporting large, stiff vines I make use of screw-hooks, which are easily inserted in wooden walls. Turn the hooks in until there is just enough room between their points and the wall to admit of slipping the vine in. Not one vine in fifty will work loose from the grip of the hooks.

Some vines are not adapted to this treatment. These I support by using strips of leather instead of cloth. The leather should be soaked in oil for twenty-four hours before using, to make it pliable and water-resisting. Do not use small tacks, as these do not have sufficient hold on the wood to make them dependable. Use nails at least an inch long, with good-sized heads.

Some persons object to the use of vines about the house, especially if it is of wood, claiming that they retain moisture to such an extent as to soon injure the walls. I have convinced myself that facts are directly contrary to this theory. The overlapping leaves act as shingles—shedding rain and preventing

it from getting to the walls against which the vines are trained.

Try to interest the children in the making of a fern-garden and a collection of native plants. A little encouragement at the beginning will do this, and after the project is well under way it will not need encouraging, for the little folks will be so fascinated by it that there will be little likelihood of their abandoning the undertaking. Take half a dozen or more children to the woods with you, with baskets in which to bring home their specimens. Show them how to take up the plants in such a manner that a considerable amount of soil will adhere to their roots. Help them pack them snugly into the baskets to prevent their being shaken about in transit, thereby losing the soil taken up with them. If the day happens to be a warm and sunny one, have them sprinkle the plants and pack some wet moss about them to keep them as fresh as possible until they can be planted in the home garden. Discourage them from taking large plants in preference to small ones, as they will most likely be eager to do. Explain that the small ones stand the best chance of living, and that nothing is gained by choosing large ones, because these will be sure to lose their foliage, and that, even if

they live, which nine out of ten will not, they will receive such a check by removal that the small plants will soon get the start of them.

It will greatly add to the pleasure of plant-collecting if you make a kind of picnic excursion of it. Take along something good to eat, and spend half a day in the woods, if possible. You will enjoy it as much as the children will. Don't dig your plants, however, until you are about ready to start for home, for it is quite important that they should be planted as soon as possible after being taken up. When they are set out, water them well and shade them for several days.

Give all plants taken from shady places a location as nearly like that from which they were taken as possible. A fern that grew in shade will be pretty sure to die if planted in a place fully exposed to the sun.

It helps matters very much if you can have a load of woods earth drawn to the home garden to plant these children of the forest in. They do not take kindly to loam, after having been grown in loose, porous soil, though many of them are strong enough to adapt themselves to ordinary garden conditions.

I know of many neighborhoods in which clubs for collecting native plants have been

formed, and the children who are in these clubs have become intensely interested in their gardens of native plants. This is as it should be, for we have many beautiful wild flowers that are better worth growing than foreign kinds for which large prices are asked. Pride in our home plants ought to be encouraged, and there is no better way of doing this than by interesting the boys and girls in the making of a wild garden.

The tuberose is a plant which everybody admires, but which is seldom seen in amateur gardeners' collections. I think the general impression is that it is not an easy plant to grow. Such is not the case, however. It can be grown successfully by any one who is willing to give it a little attention. Tubers should be obtained in March or April. They should be planted in pots containing sandy garden loam into which a liberal amount of good fertilizer has been thoroughly worked. If the tubers are small, two or three can be put into each seven-inch pot used. Before planting them the mass of dried roots which will generally be found adhering to the base of the tuber should be cut away with a thin, sharp-bladed knife. If this is not done, these roots often decay and the diseased condition will be communicated to the tuber

and cause it to die, or, if death does not result, to become so unhealthy that it will fail to bloom.

The plants can be turned out of their pots when the weather becomes warm, and grown on in the garden through the summer, but I would not advise this, for it will be necessary to lift and pot them before frosty nights come, as they are very tender, and a little disturbance of their roots at this time may cause their buds to blast. I would urge keeping them in pots throughout the season, as, if this is done, you always have them under control. The flowers of the tuberose are ivory-white in color. They are of thick, waxen texture, and have that heavy, rich fragrance that characterizes the magnolia and the cape jasmine of the South. They are borne in a spike at the extremity of tall stalks, thus being very effective for cutting. Because of their thick texture they last for a long time after cutting. Plants in pots remain in bloom for a month or six weeks. Every lover of deliciously fragrant flowers will do well to grow at least half a dozen of them to do duty in the window-garden in fall.

A second crop of flowers need not be expected from a tuber that has borne one crop. In order to make sure of bloom it will be

necessary to purchase fresh tubers each spring.

The abutilon is an old favorite among house plants, and its popularity is well deserved. It is of as easy culture as a geranium. Give it a good soil—preferably loam—drain its pot well, keep the soil evenly moist but never wet, and that is about all the care it will require. It may be necessary to prune it now and then during its early stages of growth in order to secure symmetrical shape, but this is easily done by pinching off the ends of such branches as seem inclined to get the start of others, and keeping them from making more growth until the others have caught up with them. Pinching back branches that do not develop side shoots will generally result in their branching freely. In this way you secure a bushy, compact plant. In order to make a little tree of the abutilon—and it is most satisfactory when grown in that manner—train it to one straight stalk until it reaches the height where you want the head to form. Allow no side branches to grow during this period of the plant's development. When three or four feet tall, nip off the top and keep it nipped off until as many branches as you think necessary have started at the top of the stalk. Allow none to grow

below. By persevering in this treatment you will succeed in getting a number of branches with which to form a treelike head.

There are several varieties of abutilon. Some have orange flowers, some red, some yellow, some pink, and some pure white. These flowers are bell-shaped and pendent. One name for the plant is the Chinese bell-flower because of its bell-like blossoms. Another is flowering maple, because of the resemblance in shape of its foliage to our native maple. There are two or three varieties with beautifully variegated foliage in which green and white and yellow are about equally distributed. I am always glad to speak a good word for this plant because of its beauty, its ease of culture, its constancy of bloom, and the fact that it is seldom attacked by insects.

Another most deserving old plant is the rose geranium. This used to be found in nearly all collections of house plants. It is as easily grown as the flowering geranium. Its foliage is very pleasing, being as finely cut as some varieties of fern. It is delightfully fragrant. A leaf or two will be found a most desirable addition to a buttonhole or corsage bouquet. It can be grown in tree form by giving it the pinching-back treatment ad-

vised for the abutilon, or it can be grown as a bush by beginning the pinching process when it is only three or four inches high, thus obliging it to throw out several stalks near the base of the plant.

Old plants of oleander may easily be renewed when they have become so large as to be unwieldy, or have outgrown the space that can be given up to them. Cut away *all* the branches to within four or five inches of the main stalk, leaving nothing but a mass of stubs. In a very short time new branches will be sent out. There will be so many of them that it will be necessary to remove the larger share of them. If this pruning is done in early spring, when the plant is brought from cold storage, the new growth ought to bear a crop of flowers in late summer. The following season the plant should be literally covered with bloom during the greater part of summer, these blossoms being as large and fine in all respects as those borne by the plant when young. I know of no plant that is more tractable than this one, and certainly we have few that are more beautiful. Large specimens are magnificent for porch and veranda decoration in summer. In December they should go into the cellar, to remain there until March.

Plants with variegated foliage are becoming more in demand yearly. Japanese maize, with long leaves striped with white and cream, is very effective when grown in a mass in the center of a bed. The Japanese hop, with foliage heavily marbled with creamy white, is quite as attractive without flowers as many of our flowering vines are. Ricinus, with enormous foliage of a lustrous coppery bronze, will be found far more "tropical" in effect then the cannas and caladiums we see so much of nowadays. The leaves of this plant often measure a yard across. If you want it to be most effective, plant it in some exposed place where it will have plenty of room to spread its branches.

From what I have said in a preceding chapter it will be readily understood that I am not an admirer of "carpet-bedding" except where plants with small, richly colored foliage are made use of. These can be pruned in such a manner as to keep each color inside its proper limit, but flowering plants will straggle across the lines assigned them, and all clearness of outline in the "pattern" will soon be lost. But when plants are located with a view to securing color contrast, very fine effects can be obtained from them. A circular bed filled with

pink, white, and pale-yellow *phlox drummondii* in rows of each color will be found pleasing, and it has the merit of being easily made.

If a round bed has scarlet salvia for its center, surrounded with yellow calliopsis, or California poppy, it will afford a mass of most intense color that will produce a most brilliant effect. A bed of pink flowering geraniums—pink, mind you, not scarlet or any shade of red—bordered with lavender ageratum, will be found extremely attractive if care is taken to cut away all trusses of bloom from the geraniums as soon as they have begun to fade. If this is not done the bed will have a draggled, slovenly effect.

Scarlet salvia combined with euphorbia, better known as "snow-on-the-mountain," will be found very effective, the white and green of the euphorbia bringing out the scarlet of the salvia most vividly, and affording such a strong contrast that a bed of these two plants will always challenge admiration.

The euphorbia will be found a very useful plant for almost any place in beds or borders where something seems needed to relieve the prevailing color. It deserves more attention than it gets.

The impression seems to prevail that many plants ought to retain their old leaves indefinitely. They will not do this, however. Leaves ripen after a time, and the plant will shed them, as all deciduous plants shed theirs in fall. Therefore if you find the lower leaves on your ficus turning yellow and dropping, don't be frightened. The plant is simply going through one of the processes of nature.

But if a good many of the leaves fall all at once it will be well to look for some other explanation of the plant's action. The loss of foliage may come from lack of moisture in the soil, or the roots of the plant may be pot-bound. Examination will show if either is the case. If the soil is found to be dry, more water should be given. If the pot is filled with roots, repot the plant, giving it more root room. The owners of plants should take all these things into consideration before coming to any conclusion as to what the cause of trouble is. Unless they do so there will have to be "guesswork" relative to it, and that is never safe or satisfactory. Trouble may come from overwatering, or from lack of good drainage, or a soil deficient in nutrition. You see, it is necessary to study these matters from several angles, so to speak,

as the trouble complained of may have its origin in any one of the conditions mentioned, and not much can be done to remedy matters until one has made an examination that brings to light the facts in the case. These known, it will be a comparatively easy matter to determine the treatment required, for the conditions that are found to exist will, to a great extent, indicate in almost every instance the remedy needed.

Some good vines for window-box culture are:

Madeira vine.—Heart-shaped foliage of a rich, glossy green. Very rapid grower.

Tradescantia.—Green, green striped with white, and olive striped with Indian red. Quick grower.

Vinca Harrisonii.—Dark-green foliage, edged with yellow.

Senecio.—More commonly known as German ivy. Pretty, ivy-shaped foliage of a clear, bright green. Very rapid grower. Needs frequent pinching back to make it branch freely.

Glechoma.—Green, variegated with bright yellow.

Othonna.—Better known as "pickle-plant" because of its cylindrical foliage, which re-

sembles a miniature cucumber. Has pretty yellow flowers.

Saxifraga.—Leaves of graying olive sprinkled with white.

Ivy-leaved geraniums.—There are many varieties, some with pink, some with white, and others with red flowers. These are excellent where flowering plants of drooping habit are desired. A box edged with these plants, especially the pink variety, with white Marguerites—better known as Paris daisies—in the center, will be found especially pleasing.

In window-boxes having a northern exposure such plants as Boston and Whitman fern, *asparagus plumosus, asparagus Sprengerii,* and any of the fibrous-rooted begonias will be found very effective. These plants can be turned out of their pots and planted in the earth in the box, or the pots in which they grow can be sunk in the soil. This is in several respects the best way, as in fall, when the window-box has to be discontinued, the plants will not have to be repotted.

Petunias are excellent plants for window-box culture. They can be made to grow in upright form by giving them a little support, or they can be allowed to droop over the sides

of the box. A combination of purple and white varieties will be found pleasing. This plant comes into bloom early in the season, when grown from seed, and it continues to bloom until cold weather comes.

THE END

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